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REPORT OF THE FRUIT AND TRUCK EXPERIMENT STATION FOR THE YEARS 1928-1929

BY

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AGRICULTURAL EXPERIMENT STATIONS

C. T. DOWELL, Dean and Director

Foreword

I have asked each of the Superintendents of the sub-stations to write a narrative report of the work done at his station during the last two years. You will notice that no tables are given. The details in regard to the different experiments will be reported later in bulletin form, at the time of the completion of the project or at definite stages in the progress of the project.

I think the farmers are more interested in the purpose of the project and the results obtained than they are in the details. It is for that reason that I have had the reports written in this form.

C. T. DOWELL, Dean and Director

REPORT OF FRUIT AND TRUCK EXPERIMENT STATION HAMMOND, LA.

Herewith is presented a general report on experimental work done at the Fruit and Truck Experiment Station, summarizing Fertilizer tests for Strawberries from 1922 to 1929, and other projects.

For a period of five years Super-phosphate, Nitrate of Soda and Muriate of Potash were applied alone and in combination with each of the other ingredients in variable proportions to determine the best combinations. All three elements were found to be necessary for best yields and quality of strawberries. The highest yields were obtained where an increased amount of Super-phosphate was used—in combination with Nitrogen and Potash. Fertilizer ratio of 1N-3P-1K, indicated most favorable results,—on our type of soil, and made up of 250 pounds of Super-phosphate, 90 pounds of Nitrate of Soda 14.8%, or 60 pounds of Sulphate of Ammonia 22% N and 27 pounds of Muriate of Potash 50% K_2O , applied at the rate of 1500 pounds per acre.

Comparing the different sources of phosphate, nitrate and potash elements in the fertilizer mixtures—the following results were obtained—Super-phosphate gave better results than bone-meal or dicalcium phosphate. In a comparative test of Nitrate of Soda—Sulphate of Ammonia, Nitrate of Lime Calurea, Cotton seed meal as sources of nitrogen element—we obtained best results from Calurea, Nitrate of Lime, Sulphate of Ammonia and Nitrate of Soda in the order mentioned. There is no difference in yields from the use of Sulphate of Potash as compared with Muriate of Potash.

The rate of application of the following mixture of fertilizer was:

Super-phosphate	16%	1500 pounds
Sulphate of Ammonia	20%	400 pounds
Muriate of Potash	50%	160 pounds

The best yield was obtained where 1500 pounds of the fertilizer mixture per acre was applied. The yields were reduced where 4,000 pounds of the above fertilizer mixture were applied.

General recommendation for commercial fertilizer application can be given on the basis of experiments conducted in the seven years 1922-1929 as follows:

A complete fertilizer 1N-3P-1K ratio should be applied when runner plants are forming or during plant propagation during the summer. Another application of fertilizer at the rate of 1500 pounds should be given at time of setting out strawberry plants in the Fall. Top dressing with Sulphate of Ammonia or Nitrate of Soda at the rate of 75 to 100 pounds per acre—when plants are mulched with pine straw about the first week in February—has given us the best results.

In testing varieties of Strawberries we have not found any that have proven satisfactory. Further trials are being carried on with crosses originated by the U. S. Department of Agriculture and Louisiana Experiment Station.

Results of one season with the use of mulch paper for Strawberry culture were unsatisfactory. The paper decayed during the winter allowing the weeds to grow among the strawberry plants. At first the mulch paper had a stimulating effect on the strawberry plants—but the heavy rains during the winter months caused the paper to decay. Further tests are being made with heavier mulch paper.

Soil treatments: Treatment of the soil was given in the form of top dressing just after “scraping” the soil around the plants. The following ingredients were used: Uspulun, Flowers of Sulphur 600 pounds per acre, Oxidized Sulphur, Hydrated Lime 3,000 pounds per acre, Copper Sulphate 45 pounds per acre, Calcium Sulphate 1,000 pounds per acre. The hydrated lime application, one season’s results, shows beneficial results, causing more vigorous growth of plants and increased yield of fruit. Calcium Sulphate gave detrimental results—low yields and reduced vigor of plants.

MUSCADINE GRAPE CULTURE

The work with Muscadine grape culture was done along the lines of methods of training and pruning and variety tests. Of all varieties tested for quality of fruit, yield and vigor of plants the Thomas variety has proven the best. Vines were planted 10 feet apart and interplanted with male vines, in the ratio of one male vine to 10 female vines.

The Thomas variety is well adapted to the lighter types of sandy loam soils and for best results should be trained to two wires, first

wire three feet from the ground, the second wire $3\frac{1}{2}$ feet above the lower wire. The fruiting arms are allowed to form along these wires and are best pruned to spurs 3 or 4 buds each. The three wire system may be used to give the vines more fruiting area on heavier and more fertile types of soil, in which case six main branches will carry the fruiting spurs instead of four as in the two wire system. Pruning develops larger fruit and more uniform ripening which begins with the Thomas variety about the 20th of August. Fertilizing with 200 to 600 pounds of Super-phosphate and 100 to 200 pounds of Sulphate of Ammonia or Nitrate of Soda is recommended for Spring application. A cover crop of Soy beans or Cowpeas is planted the latter part of March or first week of April and this disced under the first week in August. The Thomas variety of Muscadines is high in sugar content—well adapted to making unfermented grape juice, preserves, marmalades and other products.

BLACKBERRY AND DEWBERRY CULTURE

A soil of the clay loam type that retains moisture was selected for blackberry culture. The MacDonald blackberry was interplanted with Lucretia dewberry for pollination, three rows MacDonald to one row Lucretia. The plants were set three feet apart in rows five feet apart. The plants came into bearing the second season after setting out and bore at the rate of 50 crates of fruit per acre. The fruit was medium in size, elongated, firm, of excellent quality and adapted to shipping. MacDonald's shipped to Chicago and Detroit arrived at these markets in excellent condition—it was reported,—when shipped with strawberries in refrigerated cars. In later seasons the MacDonalds increased in yield to 150 crates of 24 pints per acre. After five years of test we find it necessary to replant the vines to a new field to prevent crowding of fruiting plants and enabling the better to control the insects and diseases on the new reset plants. January or February is the best time for planting. The land should be prepared in advance and it is best to have it in cultivation the previous season before setting the young plants. After flat breaking—the soil should be put up in ridges five feet apart—for drainage—the first season—the plants may be fertilized with a complete fertilizer. When barn yard manure is not available, at the rate of 500 to 1,000 pounds of 4%

Nitrogen, 8% Phosphorus, 4% Potash and interplanted with a tillable crop such as Soybeans, these plowed under for humus in October. Later as the plants become larger—clean cultivation is given in the Spring and Summer immediately after harvest which begins about the 20th of May and extends to the latter part of June. It is very well adapted as a crop to follow strawberries in this section.

SATSUMA ORANGE CULTURE

The Owari variety trees one year old were set out in February, 1926, and spaced 20 by 20 feet apart on sandy loam well drained soil.

Fertilizer test applying:

10 pounds Nitrate of Soda to 10 trees. Row No. 1.

10 pounds Nitrate of Soda }
40 pounds Super-phosphate } to 10 trees. Row No. 2.

10 pounds Nitrate of Soda }
40 pounds Super-phosphate } to 10 trees. Row No. 3.

5 pounds Muriate of Potash }
10 pounds Nitrate of Soda }
40 pounds Super-phosphate } to 10 trees. Row No. 4
10 pounds Muriate of Potash }

Row No. 4 seems to be more vigorous and trees made best growth.

Row No. 1 produced late terminal growth which was injured during winter freezes. Fertilizer applied in April—cover crop of Cowpeas planted for Summer and plowed under in September for humus.

PECAN CULTURE

Two main projects are followed in Pecan Culture. Variety tests and stocks for pecans. Trees have been planted on different types of soil and spaced 60 feet apart. While the trees were young, crops of soybeans and corn were cultivated and fertilized between the trees, with fertilizer consisting of 4% Nitrogen, 8% Phosphorus, 4% Potash, at the rate of 200 pounds per acre and a top dressing of Nitrate of Soda given the corn and soybeans when about

a foot high. The pecan trees are 8 years old and made satisfactory growth on upland. The low lands where hard pan is found have not proven satisfactory for pecans. The trees have not yet come into bearing to give results of either varieties or the influence of different stocks on same variety. *Hicoria Aquatica* made the most vigorous growth as a nursery tree for budding and grafting.

A test of different species of plants including such as: Blueberries, Mayhaws, Jap. Persimmons, Tung oil trees, Kumquats, Pears, Apples, Quince, Plums and Nectarines is being made—

The blueberries which are adapted to an acid soil have some promise of being adaptable to our section when a desirable variety is selected. Thus far no variety has been found that can be recommended.

There is some interest in the culture of Mayhaws. Plants were picked out of the native habitat and are being cultivated. Trees have not yet come into bearing after four years of growth.

The Triumph and Tane Nashi Persimmons came into bearing the fourth year after setting out and are prolific, being well adapted to our soil conditions.

The Tung oil trees bore some fruit the third year after planting—the fifth year producing 5 pounds of dried fruit per tree. The trees withstood temperatures of 15° F. without injury and are adapted to upland clay loam soils in this section of Louisiana.

The Chinese sand pear, Kieffer, Garber and LeCompte have resisted fire blight when grown without cultivation. The Pineapple pear being most resistant but not of as good quality as LeCompte.

The Apple trees grown here have not proven satisfactory—being shy bearers, subject to fire blight and blister canker—the Mammoth Blacktwig and Winesap are most resistant to diseases but do not set much fruit.

The Mammoth Quince has not set fruit after fifth year of growth.

The Japanese varieties of plums are subject to brown rot and blight or die back of the twigs—The variety giving best results is the Excelsior. The Nectarines have not produced fruit—the blooms having been killed by spring frosts.